

### REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-8, 12-14, and 19-22 will be pending. By this amendment, claims 9-11 and 15-18 have been canceled; claims 1-8 and 12-14 have been amended; and claims 19-22 have been added. No new matter has been added.

#### Objections to the Claims

In Section 2 of the Office Action, claims 1-18 stand objected to for informalities. The claims have been amended or canceled to address the objections.

#### § 102 Rejection of Claims 1-7 and 10-18

In Section 5 of the Office Action, claims 1-7 and 10-18 stand rejected under 35 U.S.C. §102(b) as being anticipated by Segawa (U.S. Patent No. 4,905,287). Claims 1-7 and 12-14 have been amended to address the rejection. Claims 10-11 and 15-18 have been canceled.

In the Background section of the Specification, it was stated that “under present situations, at the initial stage of learning in the language processing system, i.e., the stage where learning of grammatical rule is insufficient, or words to be processed are not given as a sample for learning, it is impossible to calculate the word analogousness and the word train analogousness. Thus, it is difficult to obtain a suitable arrangement of words (word train). In addition, in the case where the word trains obtained by an insufficient grammatical rule can be only outputted, representation ability of the language of the system would be restricted.”

*Background of the Specification, Page 4, lines 13-19.*

To solve the above-stated problem, embodiments of the present invention provide apparatus, methods, and programs for determining analogousness between input words and registered words registered in a dictionary.

For example, the structure of apparatus claim 1, as presented herein, includes

*“a sensor section configured to sense an object related to said input words, and generating a sensed output;*

*a pre-processing section configured to receive said sensed output, and extract feature parameters of said object related to said input words from said sensed output;*

*a plurality of discriminators configured to receive said feature parameters of said object, and process said feature parameters to generate notation functions using a plurality of discrimination functions;*

*a selector configured to select a plurality of discriminated words representing said object;*

*a word train generating section configured to receive said plurality of discriminated words along with said notation functions, said word train generating section operating to generate a set of word trains by using all permutations of said plurality of discriminated words; and*

*word analogousness calculating means configured to calculate word analogousness between each word train of said set of word trains and a registered word train using said notation functions.”*

(emphasis added)

In summary, the apparatus of claim 1 for determining analogousness between input words and registered words registered in a dictionary comprises: a sensor section for sensing an object related to the input words (Specification, page 11, lines 3-10); a pre-processing section extracting feature parameters of the object related to said input words (Specification, page 11, lines 11-17); a plurality of discriminators for processing the feature parameters to generate notation functions using a plurality of discrimination functions (Specification, page 11, line 18 to page 12, line 10); a selector for selecting a plurality of discriminated words representing the

object (Specification, page 12, line 11 to page 13, line 7); a word train generating section for generating a set of word trains by using all permutations of said plurality of discriminated words (Specification, page 16, lines 5-15); and word analogousness calculating means for calculating word analogousness between each word train of said set of word trains and a registered word train using said notation functions (Specification, page 17, line 8 to page 19, line 1).

By contrast, Segawa discloses receiving an input word and a related probability density function and calculating the similarity between “the reference data phoneme and the input feature data” using the probability density function of the input word. Thus, Segawa fails to teach or suggest an apparatus for determining analogousness between input words and registered words registered in a dictionary comprising: a sensor section for sensing an object related to the input words; a pre-processing section extracting feature parameters of the object related to said input words; a plurality of discriminators for processing the feature parameters to generate notation functions using a plurality of discrimination functions; a selector for selecting a plurality of discriminated words representing the object; a word train generating section for generating a set of word trains by using all permutations of said plurality of discriminated words; and word analogousness calculating means for calculating word analogousness between each word train of said set of word trains and a registered word train using said notation functions.

Based on the foregoing discussion, claim 1 should allowable over Segawa. Since independent claim 12 closely parallels, and includes substantially similar limitations as recited in, independent claim 1, claim 12 should also be allowable over Segawa. Further, since claims 2-7 and 13-14 depend from claims 1 and 12, respectively, claims 2-7 and 13-14 should also be allowable over Segawa. Claims 10-11 and 15-18 have been canceled.

Accordingly, it is submitted that the rejection of claims 1-7 and 10-18 based upon 35 U.S.C. §102(b) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### § 103 Rejection of Claim 8

In Section 7 of the Office Action, claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Segawa in view of Komori *et al.* (U.S. Patent No. 6,108,628; hereinafter referred to “Komori”).

Based on the foregoing discussion regarding claim 1, and since claim 8 depends from claim 1, claim 8 should be allowable over Segawa. Further, since Komori has been cited for teaching Bhattacharyya distance, Segawa and Komori, in combination or individually, fail to teach or suggest all the limitations of claim 1 and claim 8.

Accordingly, it is submitted that the rejection of claim 8 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

#### § 103 Rejection of Claim 9

In Section 7 of the Office Action, claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Segawa in view of Chou *et al.* (U.S. Patent No. 5,797,123; hereinafter referred to “Chou”). Claim 9 has been canceled.

#### Newly-added Claims 19-22

Based on the foregoing discussion regarding claims 1 and 12, and since independent claims 19-22 closely parallel, and include substantially similar limitations as recited in,

independent claims 1 or 12, newly-added claims 19-22 should be allowable over the cited prior art references.

### Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-8, 12-14, and 19-22 are respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, were patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes that have been made to these claims were not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes were made simply for clarification and to round out the scope of protection to which Applicant is entitled.

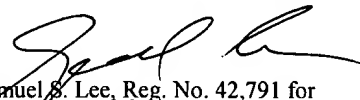
In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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